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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,655	11/26/2003	Edmund Arthur Flexman	AD6923 US NA	8783
23906	7590	04/14/2006	EXAMINER	
E I DU PONT DE NEMOURS AND COMPANY LEGAL PATENT RECORDS CENTER BARLEY MILL PLAZA 25/1128 4417 LANCASTER PIKE WILMINGTON, DE 19805			AN, SANG WOOK	
			ART UNIT	PAPER NUMBER
			1732	

DATE MAILED: 04/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/723,655	Applicant(s) FLEXMAN ET AL.	
	Examiner Sang W. An	Art Unit 1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/8/04, 6/11/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-13 rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi et al (5418286).

Regarding claim 1, Takahashi et al teach a method for producing a substrate comprising the steps of: (a) forming a polyacetal polymer matrix comprising about 85% to about 98% of a polyacetal (col 1 line 67); (b) adding about 2% to about 15% of a concentrate to the polyacetal matrix, wherein the concentrate comprises about 0% to about 40% of a thermoplastic polyurethane and about 20% to about 80% of at least one amorphous or semi-crystalline polymer, in polyacetal and wherein a substrate is formed (col 1 line 68 & col 2 lines 1-7), and (c) molding the substrate (col 2 line 41).

Regarding claim 2, Takahashi et al teach that the polyacetal polymer is a branched or linear polymer having a number average molecular weight in the range of about 10,000 to about 100,000 (col 2 line 28).

Regarding claim 3, Takahashi et al teach that the polyacetal polymer is a homopolymer, a copolymer or a mixture thereof (col 1 line 22).

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Regarding claim 4, Takahashi et al teach that the homopolymer has terminal hydroxyl groups having been end-capped by a group selected from esters or ethers (col 2 lines 56-59).

Regarding claims 5 and 6, Takahashi et al teach that the ester group is an acetate group and the ether group is a methoxy group (col 2 lines 56-59).\

Regarding claim 7, Takahashi et al teach that polyacetal matrix further comprises at least one stabilizer (col 4 line 41).

Regarding claim 8, Takahashi et al teach that the concentrate is in the form of at least one pellet (col 5 line 1).

Regarding claim 9, Takahashi et al teach that at least one amorphous or semi-crystalline polymer is selected from the group consisting of styrene acrylonitrile copolymers, styrene acrylonitrile copolymers toughened with acrylonitrile-butadiene-styrene resins, styrene acrylonitrile copolymers toughened with acrylonitrile-ethylene-propylene-styrene resins, polycarbonates, polyamides, polyesters, polyester-polyether copolymers, polyarylates, polyphenyleneoxides, polyphenylene ethers, high impact styrene resins, acrylic polymers, imidized acrylic resins, styrene maleic anhydride copolymers, polysulfones, styrene acrylonitrile maleic anhydride resins, styrene acrylic copolymers, and derivatives thereof (col 2 line 3).

Regarding claim 10, Takahashi et al teach that at least one amorphous or semi-crystalline polymer is selected from the group consisting of styrene acrylonitrile copolymers, acrylonitrile-butadiene-styrene resins, acrylonitril-ethylene-propylene-

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styrene resins, and polycarbonates, polyesters, polyester-polyether copolymers (col 2 line 3).

Regarding claim 11, Takahashi et al teach that the substrate may be molded using a method selected from the group consisting of extrusion molding and injection molding (col 4 lines 63-68).

Regarding claim 12, Takahashi et al teach a process for making an article comprising the steps of: (i) forming the substrate according to claim 1 (see rejection for claim 1); and (ii) adhering at least one additional layer to the substrate (col 5 lines 3-4).

Regarding claim 13, Takahashi et al teach that at least one additional layer is a thermoplastic olefin, thermoplastic elastomers, polyethylene, polypropylene, thermoplastic polyurethanes, polar olefins, solvents, water latex, epoxy, urethane, powder coating acrylic, solvent-based glues, latex, epoxy, paint, printing ink, and super glue (col 5 lines 3-4).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claim 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al (5418286) in view of Platz et al (6497782).

Regarding claim 14 and 15, Platz et al teach a thermoplastic that is coated in full-surface (co-continuous) or strip form (discontinuous) (abstract). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use the teachings of Platz et al in Takahashi et al in order to produce a thermoplastic with a particular design.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang W. An whose telephone number is (571) 272-1997. The examiner can normally be reached on Mon-Fri 7 AM - 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sang Wook An
Patent Examiner
Art Unit 1732
March 27, 2006



MICHAEL P. COLAIANNI
SUPERVISORY PATENT EXAMINER